Proposed Improvements to the Department of Ecology's Well Reporting Processes (The "Upgrade Well Reporting" Proposal)

Developed by the Squaxin Island Tribe in consultation with Ecology's Well Construction and Licensing Office

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Purpose:
Accurate well data is critical for all parties to make water management decisions that are protective of the environment and beneficial to communities. The quality of well data in Washington State can be improved with changes to how the State collects information from drillers. These improvements are essential for monitoring and management of shared water resources in the State of Washington.

Background:
In 2018, at the request of the Squaxin Island Tribe, Ecology assigned staff to assess the accuracy of water well location reporting in Mason County. The project checked 187 water well reports (2.1% of the 8,910 water well reports from the county). Ecology uses the Public Land Survey system (PLS) to record well locations by township, range, section, quarter and quarter-quarter. Currently wells are mapped by 40-acre quarter-quarter centroids on the State Well Report Viewer. The results showed that 79% of well locations could be verified with the information on the report. Of those that could be verified, 33% had incorrectly reported PLS locations. Ecology performed a similar, statewide assessment of well location data and found a 24% error rate for all types of regulated wells.

As Tribes utilize Ecology's well report database frequently, tribal staff would benefit by improving well location data management and processes. In discussions between Ecology, Squaxin, and Mason County, all agreed that improvements to Ecology's well reporting processes could help reduce the error in water well location reporting.

Ecology is eager to expand their web-based well reporting options. In 2019, Ecology surveyed well drillers to determine their preferences regarding format and features. Of 133 respondents, 63% placed a high importance on a new well location mapping tool that would use recent aerial

imagery to determine a well's PLS location and coordinates. Only 6% responded that this effort would be of low importance. These results showed drillers preferred to submit well reports from a web form in the current well report format.

We propose the following changes to Ecology's well data processes:

1. **New well location mapping tool for drillers**
   An interactive web-based mapping tool that provides an intuitive means of determining PLS location has been implemented in Oregon recently. Ecology is interested in developing their own web tool which provides the PLS and coordinates location (latitude/longitude) for a new well automatically. The Notice of Intent web form would shell into a new GIS application utilizing recent aerial imagery, a parcel overlay, and a tool that updates the quarter-quarter and coordinates on the NOI. The well driller need only click on the interactive map to generate a well location. When a driller finishes a well report, they can utilize the same tool to refine their coordinates and PLS location.

2. **Require coordinates on well reports**
   Coordinates can perfectly describe a well location within a parcel. Adding latitude and longitude on well reports will serve to verify a well's location on the ground accurately and easily. Ecology intends to require well coordinates on reports, though a WAC change may eventually be needed.

3. **New web-based well reporting application**
   Ecology is determining the best approach for implementing a new web-based well reporting application. According to a recent survey of drillers and their support staff, a web-form mimicking the current well report forms that uploads directly to Ecology's database is desired. The benefits of using a web-based well reporting process are numerous:

   - Less backlog of scanning and data entry - more time for Ecology staff to vet well reports
   - Legible text, fewer written responses
   - Digitizing all well report data, not just the fields that were captured by Ecology staff during the scanning process
   - A smart form format can eliminate out-of-range entries

   By capturing digitized well location data, it would be feasible in the future to automate the process of verifying well locations and water right information. Tracking well location and permit-exempt wells is a need of users who download geospatial datasets

from Ecology's GIS data page (https://ecology.wa.gov/Research-Data/Data-resources/Geographic-Information-Systems-GIS/Data).

The Well Construction and Licensing Office at Ecology needs more capacity to vet well reports. Automation from web-based reporting would free up staff to do more vetting, because the office's staff would not have to do as much scanning of paper documents and manual entry of data fields for each report. They need more automation, not FTEs.

Please share this proposal with your RCW 90.94 watershed planning committees ask members to support it. This would include adding it as a proposed action in a watershed plan.

Please contact Mary Verner, Manager of Ecology's Water Resources Program and Tyson Oreiro, Ecology's Tribal Liaison to express your support for the "Upgrade Well Reporting" proposal.

See next two pages for figures.

https://appswr.ecology.wa.gov/wellconstruction/Wells/NoticeOfIntentForm.aspx?form=noiwaterwellform

DEPARTMENT OF ECOLOGY State of Washington

About us

Laws, Regs and Rules | Notice of Intent Forms | Contact Us

Well Construction and Licensing Search Tools

Step 1 of 3: Enter Information

An asterisk (*) designates the field as required.

Notice of Intent Form to Construct a Water Well

Property Owner Contact Information

‡An organization name or the first and last property owner name is required.

Organization Name‡ (e.g. Daisy Farms LLC)

OR

Last Name‡

First Name‡

Email Address*

Confirm Email Address*

Mailing Address*

City*

State*

Zip*

Phone ( )

International customers cannot submit online. Contact us for assistance.

Consulting Firm Contact Information

Firm Name

Well Location

Township*

Range*

Section*

Latitude

Longitude

* Quarter-Quarter Section:

NW	NE	NW	NE
SW	SE	SW	SE
NW	NE	NW	NE
SW	SE	SW	SE

Well Street Address

Well City

Well Zip Code

Tax Parcel Number

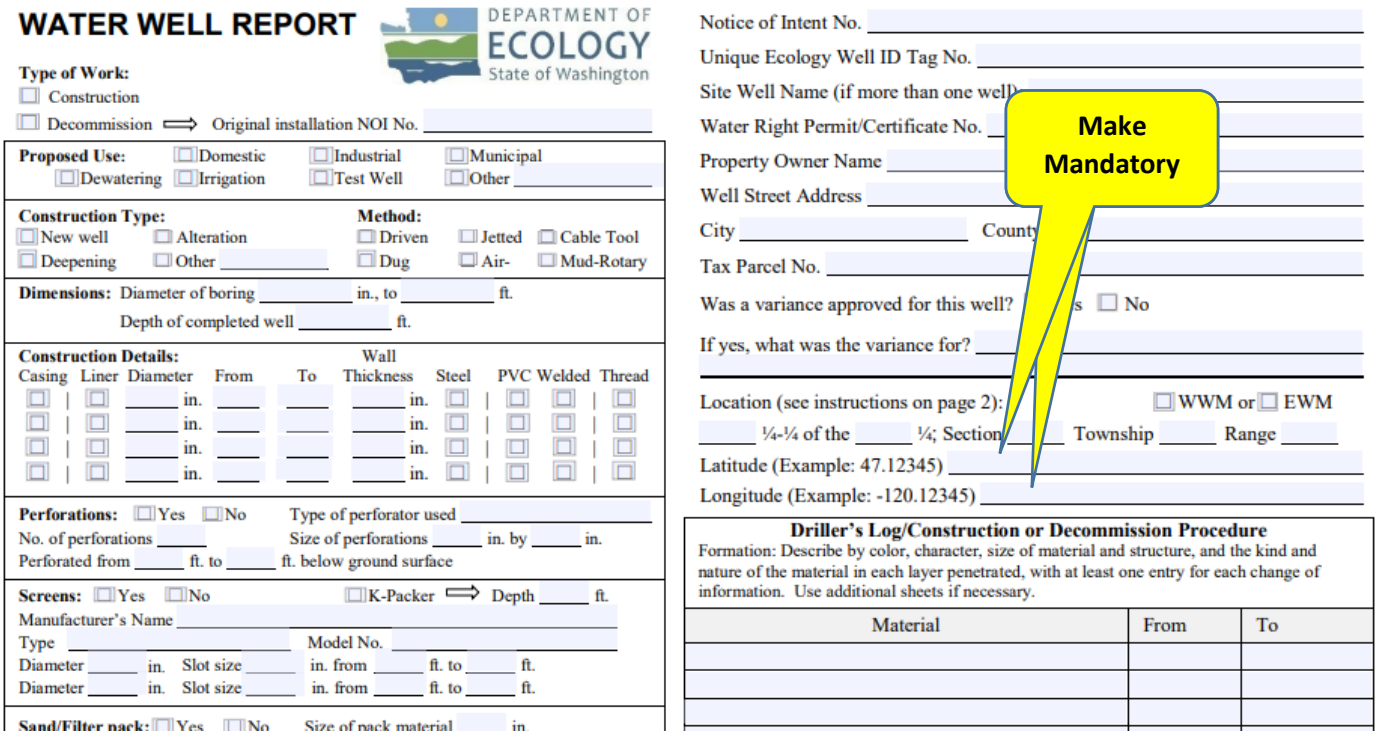
County*

Add interactive map to automatically identify township, range, section, latitude, and longitude

Make Optional

Make Mandatory

https://fortress.wa.gov/ecy/publications/documents/ecy050120.pdf



WATER WELL REPORT

DEPARTMENT OF ECOLOGY State of Washington

Type of Work:
☐ Construction
☐ Decommission ⟹ Original installation NOI No. _____

Proposed Use: ☐ Domestic ☐ Industrial ☐ Municipal ☐ Dewatering ☐ Irrigation ☐ Test Well ☐ Other _____

Construction Type: ☐ New well ☐ Alteration ☐ Deepening ☐ Other _____

Method: ☐ Driven ☐ Jetted ☐ Cable Tool ☐ Dug ☐ Air- ☐ Mud-Rotary

Dimensions: Diameter of boring _____ in., to _____ ft.
Depth of completed well _____ ft.

Construction Details:

Casing	Liner	Diameter	From	To	Wall Thickness	Steel	PVC	Welded	Thread
☐	☐	_____ in.	_____	_____	_____ in.	☐	☐	☐	☐
☐	☐	_____ in.	_____	_____	_____ in.	☐	☐	☐	☐
☐	☐	_____ in.	_____	_____	_____ in.	☐	☐	☐	☐
☐	☐	_____ in.	_____	_____	_____ in.	☐	☐	☐	☐

Perforations: ☐ Yes ☐ No Type of perforator used _____
No. of perforations _____ Size of perforations _____ in. by _____ in.
Perforated from _____ ft. to _____ ft. below ground surface

Screens: ☐ Yes ☐ No ☐ K-Packer ⟹ Depth _____ ft.
Manufacturer's Name _____
Type _____ Model No. _____
Diameter _____ in. Slot size _____ in. from _____ ft. to _____ ft.
Diameter _____ in. Slot size _____ in. from _____ ft. to _____ ft.

Sand/Filter pack: ☐ Yes ☐ No Size of pack material _____ in.

Notice of Intent No. _____
Unique Ecology Well ID Tag No. _____
Site Well Name (if more than one well) _____
Water Right Permit/Certificate No. _____
Property Owner Name _____
Well Street Address _____
City _____ County _____
Tax Parcel No. _____
Was a variance approved for this well? ☐ Yes ☐ No
If yes, what was the variance for? _____

Location (see instructions on page 2): ☐ WWM or ☐ EWM
_____ ¼-¼ of the _____ ¼; Section _____ Township _____ Range _____
Latitude (Example: 47.12345) _____
Longitude (Example: -120.12345) _____

Driller's Log/Construction or Decommission Procedure
Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information. Use additional sheets if necessary.

Material	From	To

Make Mandatory

Add interactive map to automatically identify township, range, section, latitude, and longitude

Change this water well report into a web form.